

discloses that the radio frequency power signal sensed is analogous to that from an FM radio signal. (Column 7, lines 33-34). A radio frequency power generator generates a 13.56 MHz signal that “has few or no harmonic signals.” (Column 7, lines 34-35). Measuring the radio frequency signal at the load produces a distorted harmonic-rich frequency signal; filter circuits and a splitter selective to the harmonic frequencies of the fundamental frequency, e.g., 13.56 MHz, output to a multiplexer as a clean sine wave signal at a selected harmonic frequency. (Column 7, lines 39-52). A magnitude detector then determines the magnitude of the signal. (Column 7, lines 51-54).

Williams discloses an RF sensor for monitoring voltage, current and phase angle of an RF signal being coupled to a plasma reactor (abstract). Williams discloses a sensor encased in a container having electromagnetic radiation isolation capabilities, the container having a conductive property to provide electromagnetic shielding (Williams, Column 3, line 37). Utilization of the RF sensor is disclosed within a plasma system wherein an RF source in the form of a single RF generator is coupled to a processing reactor through a matching network by a single transmission line (Williams, Fig. 1, and Column 3, lines 1-5).

The Examiner references Turner for disclosing a plurality of generator means (identified as no. 12 of figures 1 and 5) for generating a plurality of power outputs onto a single transmission means at a plurality of frequencies, each one of said plurality of outputs having associated characteristics. (Office Action, page 2). And also references Turner for disclosing common detection means for detecting these associated characteristics include means for sensing characteristics of a first generated output at a first frequency, alternating to a second frequency. (Office Action, page 2).

The Examiner acknowledges, however, that Turner fails to disclose features of a common detection means for sensing associated characteristics of a first generated output at a first frequency and the associated characteristics of a second generated output at a second frequency. (Office Action, page 3).

To fill the acknowledged gap, the Examiner references Williams for disclosing an RF sensor, outputs from which are used to calculate various properties of the plasma, the outputs designated as RF voltage, RF current and DC voltage (Office Action, page 3). Moreover, the Examiner notes that RF voltage and RF signal outputs can be frequency discriminated to obtain the fundamental and harmonic components of the RF signal and are coupled through separate filters (Office Action, page 3).

According to the Examiner, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Williams to the system of Turner “in order to allow a single device to measure voltage current and phase at more than one frequency.” (Office Action, page 3).

The present Office Action yields yet a third combination of references, based on Turner as the primary reference, advanced to demonstrate the alleged obviousness of the

Applicant's claims under §103(a), indeed, even supporting the same rationale supposedly linking each combination based on Turner. Originally, in the first Office Action, a rejection pursuant to §103(a) was made wherein Turner was combined with Thomas (U.S. Patent No. 5,273,610). After receiving Applicants' response, in the next Office Action, the Examiner withdrew the rejection, and issued a separate §103(a) rejection combining Turner with Thomas and Malvretic (U.S. Patent No. 6,046,594). After receiving Applicants' arguments once again, the Examiner has now advanced the present iteration of what is essentially the same rejection. Each time, Applicant explained in its two prior responses, dated February 5, 2004 and April 7, 2003, why Turner, in whatever combination of citations asserted, did not render the claims obvious and provided no teaching or motivation for the combination asserted.

And once again, in the present Office Action, the Examiner indicates that the grounds for rejection are "new", and Applicants' still unaddressed arguments mooted. Applicants understand this to mean each former rejection has been withdrawn in view of its arguments, and, hence, Applicants have been successful in their traversal of the rejection, including the applicability of Turner. Nonetheless, like Lazarus, Turner keeps returning to be asserted in yet additional combinations. As a result of this clearly piecemeal approach to examination, Applicants are charged once again with a response to a non-final rejection, advancing yet another combination based on Turner, with no apparent end in sight.

Applicants submit the Examiner has an obligation to conduct a search of prior art and then fully examine the application at the outset, raising all issues deemed appropriate. No amendment to the claims has been made by Applicant, and no rationale has been provided for what appear to be repeated prior art searches conducted after each response (given that Mavretic was not cited or considered by the Examiner in the first Office Action, and similarly, Williams

was not cited or considered in the second). Moreover, the Examiner has apparently employed this procedure to skirt consideration of Applicant's arguments presented, at the very least with respect to Turner, on each occasion. This improper procedure must stop.

The Examiner now cites Turner again, this time in combination with Williams, for reasons that appear to Applicants identical to that set forth in the two former §103 rejections, i.e. to allegedly demonstrate it obvious to "allow a single device to measure voltage, current and phase at more than one frequency." (See Office Actions of April 15, 2004, July 9, 2003, and December 5, 2002). Applicants are entitled to know to what degree the Examiner regarded its traversal as effective, and what he may have regarded as insufficient, rather than reading between the lines of new rejections. Absent that, Applicants is forced to reiterate its prior arguments with respect to Turner without any more than its educated guess at the Examiner's position, and to weave its present objections to the citation of Williams into its prior position. Applicant is left, thus, to straddle two positions while the Examiner watches in judgment.

Applicant therefore, and respectfully, requests from the Examiner that it receive the full consideration of its arguments presented, and an allowance where its contentions demonstrate the inapplicability of the cited art, as has evidently been the case on two previous occasions.

With respect to the rejection as presently configured, Applicant notes that it does not met the requirements of a *prima facie* case of obviousness. In order to establish a *prima facie* case of obviousness, each of the references cited must teach every element recited in the claims and identify the necessary motivation to combine these elements. *In re Rouffet*, 149 F. 3d 1350; 47 USPQ2d 1453 (Fed. Cir., 1998). The cited references fail both to teach every element of Applicants claims and to identify the necessary motivation to combine the teaching to arrive at

Applicants' claims. Statements with regard to relevant skill in the art do not suffice to "bridge over gaps in substantive presentation of an obviousness case." *Al-Site Corp. v. VSI International, Inc.*, 174 50 USPQ2d 1161 (Fed. Cir. 1999). It is respectfully submitted that the cited references fail not only to disclose or teach each element of the Applicant's claims, they also fail to provide the requisite suggestion *to do* what the applicants have done.

Implicit in the rejection, though unstated and lacking support in Turner, is the contention that somehow Turner motivates or suggests its combination with Williams. Yet, Turner has been previously advanced as allegedly motivating and suggesting combination with Thomas, then with Thomas and Mavretic, and now with Williams. Moreover, each combination is advanced as support of the same conclusion: "to allow a single device to measure voltage, current and phase at more than one frequency." Hindsight examination has rarely been so obviously employed to fit apparently pre-conceived notions of the state of the art. For this reason alone the rejection should be withdrawn.

Moreover, the rejection as a whole, lacks any objective reason or reference to facts supporting the advanced combination of the cited references, and without such the rejection is clearly insufficient, as a matter of law. *Ex parte Levengood*, 28 USPQ2d 1300, 1301-02 (BPAI 1993).

Applicants' basic contention, unaddressed and now presented for the third time, is that Claims 1 and 23 call for "a plurality of generator means for generating a plurality of power outputs onto a single transmission means...at a plurality of frequencies..." Claim 12 calls for "generating a first power output at a first frequency and generating a second power output at a second frequency." Turner, however, discloses a single generator (12) generating a 13.56 MHz signal that has few or no harmonic signals. Moreover, that the same generator appears on

multiple drawings does not disclose a “plurality” of generators providing power to a single transmission means. Turner thus fails to disclose a plurality of power outputs, at a plurality of frequencies, onto a single transmission means. Clearly, Turner does not meet the elements of Applicants’ claims; neither does the Examiner’s rejection. Moreover, no rationale is presented to account for this apparent gap in Turner. All elements and limitations of the Applicants’ claims have not been accounted for by the rejection. It therefore fails as a matter of law. *In re Rouffet*, 149 F. 3d 1350; 47 USPQ2d 1453 (Fed. Cir., 1998).

Since Turner fails to disclose generating a plurality of power outputs at a plurality of frequencies, onto a single transmission means, the notion of a common detector means between power sources is necessarily absent. In Turner, a distorted harmonic-rich signal results at the load, where it is measured (and later filtered to avoid distorted results). Turner is not concerned with sensing associated characteristics of first and second outputs at first and second frequencies, in fact, it seeks to reconcile harmonic frequencies to obtain a “clean sine wave signal” for sensing. (See Column 7, lines 50-51). Therefore, apart from the unacknowledged gaps in its disclosure, Turner also fails to teach, suggest or motivate the asserted combination with Williams to fill the gaps the Examiner acknowledges, i.e., the common detection means as claimed. In the rejection, the Examiner places Turner in a role it cannot fill.

Turner’s miscasting notwithstanding, Williams is also insufficient in the purpose the Examiner assigns for it. Aside from never providing an explanation of how the system of Williams, and its RF Sensor, would be adapted for use in the system of Turner or why (even if it there were some motivation, teaching or suggestion to do so in Turner, which there is not) the Examiner does not account in Williams for sensing the associated characteristics with respect to the generation of a plurality of *power* outputs onto a single transmission line. Instead the

examiner references Williams for disclosing three *sensor* outputs, derived from the fundamental and, possibly, harmonic components of a single RF power output, provided filters for passing the particular harmonic frequencies to the particular sensor output are in place. Williams makes no reference to any method involving switching frequencies to alternate sensing between two or any apparatus for doing so. Williams discloses coupling two outputs through respective and separate filters to pass a fundamental and a harmonic frequency of the same signal, no alternation activity between two separate frequencies is referenced in Williams. Williams, as such, does not teach, suggest or disclose using a single detection means to monitor the RF characteristics of multiple generators providing power outputs on a single transmission line nor does it teach, suggest or disclose alternating between frequencies associated with the power outputs of the generators.

Lack of disclosure as to combining the citations, and lack of motivation showing motivation to combine, is fatal to the rejection. Nonetheless, leaving these considerations aside for a moment, assuming, *arguendo*, the citations are taken together, as the Examiner suggests, the rejection lacks disclosure of all claimed elements. The Examiner admits that, apart from its other deficiencies Applicant has pointed out, Turner fails to disclose the common detection means of the claim. To wit, none of the citations disclose the detection means coupled to two or more generators on a single transmission line, or a common means that alternates or switches from one frequency to another. Hence, features of one or more of the independent claims pending have not been shown as present in any of the citations. Given this, and the incorporation of all such features in the respective dependent claims, all claims are allowable.

It is plain that the asserted combination is inadequate to make out a *prima facie* case of obviousness. The citations, even as presently configured, lack the disclosure to meet all of Applicants' claim elements and provide utterly no motivation for the asserted combination.


The record contains only the Examiner's speculation as to the ability of the asserted combination to render Applicants' claims obvious. It is well settled, however, that an obviousness rejection must be based on facts, not generalities. *Ex parte Saceman*, 27 USPQ2d 1472, 1474 (BPAI 1993). "Cold hard facts." *In re Freed*, 165, USPQ 570, 571-72 (CCPA 1970). When a rejection under § 103 is not based on facts, it cannot stand. *Ex parte Porter*, 25 USPQ2d 1144, 1147 (BPAI 1992). Speculation and conjecture are not substitutes. Therefore, the rejection fails as to all independent claims, and, as to all other dependent claims. All claims should be allowed.

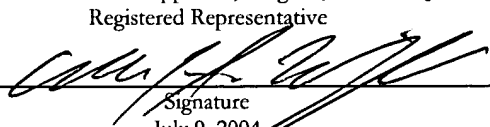


## CONCLUSION

For the reasons set forth above, reconsideration and allowance of the claims respectfully is requested. If the Examiner has any questions regarding this paper, please contact the undersigned attorney.

Respectfully submitted,

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